

CLAIMS

- 1/ A reaction vessel for automatic apparatus for immunological assay, the vessel comprising walls in the form of a vessel for receiving a sample to be tested, a test reagent, and a substrate coupled with a chemiluminescent substance, and also a filling opening, wherein the walls are proof against any light emitted by the chemiluminescent substance, apart from a window for reading the intensity of any light emitted by the reaction mixture formed by the sample to be tested, the reagent, and the substrate.
- 2/ A vessel according to claim 1, wherein the read window corresponds to the filler opening of the vessel.
- 3/ A vessel according to claim 1, wherein the read window is surrounded by a substantially plane zone against which a light-proof shoe is pressed.
- 4/ A one-piece set of multiple reaction vessels, the set comprising a plurality of vessels according to claim 1.
- 5/ Automatic apparatus for immunological assay, the apparatus comprising means for supporting, guiding, and stepwise displacement of the vessel according to claim 1 or of sets of reaction vessels according to claim 4 along a path having a predetermined number of positions, means for supporting samples to be analyzed, means for supporting reagents, and means for taking determined quantities of samples and of reagents and for injecting the quantities taken into the reaction vessels, together with means for washing the vessels, means for reading the results, and means for feeding sets of reaction vessels and for ejecting sets of used vessels, the apparatus including means for forming a temporary dark chamber that is proof against external light, said dark chamber having photometric means for measuring the intensity of light

and a vessel according to claim 1 or a vessel of a set of vessels according to claim 4.

6/ Apparatus according to claim 5, including an opaque shoe for pressing in light-proof manner around a read window of a reaction vessel provided with a central opening for passing light between the vessel and photometric means.

7/ Apparatus according to claim 5, including a plate for receiving the washing means and the photometric means.

8/ Apparatus according to claim 6, wherein the photometric means include moving equipment for pressing the shoe against the read window of the reaction vessel.

9/ Apparatus according to claim 5, including a shutter for optically isolating a photoelectric detector, in particular a photomultiplier, and means for measuring the electrical values delivered by the photoelectric detector while it is immersed in the dark, the shutter being closed.

10/ Apparatus according to claim 7, wherein movement of the moving equipment serves to close or open the shutter.

11/ Apparatus according to claim 1, including a light source for illuminating, on command, the outside of the dark chamber formed temporarily by the walls of the vessel and the photometric means so as to enable the dark chamber to be tested for light-tightness, the immunological test being rejected if the photometric means detect light emitted by the light-tightness testing source.

12/ Apparatus according to claim 11, performing a light-tightness test for each reaction vessel subjected to an immunological test.

5 13/ An automatic method of performing immunological assay, the method comprising a step of detecting the light, if any, emitted by a substrate coupled with a luminescent chemical substance in the presence of a reagent and a sample to be tested, the method including a
10 step of measuring the light intensity present inside a reaction vessel.

14/ A method according to claim 13, wherein a temporary dark chamber is formed with a reaction vessel having an
15 opaque wall and with photometric means.

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